

A Purple Ulcer

Caleb P. Canders, MD
Jennifer J. Weinberg, MD

David Geffen School of Medicine at UCLA, Department of Emergency Medicine, Los Angeles, California

Supervising Section Editor: Sean O. Henderson, MD

Submission history: Submitted February 14, 2014; Revision received March 3, 2014; Accepted April 2, 2014

Electronically published May 23, 2014

Full text available through open access at http://escholarship.org/uc/uciem_westjem

DOI: 10.5811/westjem.2014.4.21531

[West J Emerg Med. 2014;15(4):366.]

CASE

A 42-year-old woman presented with a left lower extremity ulcer. Three weeks prior, she had been struck by a motor vehicle and developed bullae on her thigh, the main area of impact. She could not afford to see a primary doctor, and had been applying a low-cost, over-the-counter topical antiseptic solution to the site since the accident. On examination, she had a 26 by 14 centimeter ulcer on her left medial thigh without tenderness, purulence or crepitance. The ulcer was noted to be bright purple (Figure).

DIAGNOSIS

Gentian violet (hexamethylrosaniline), the basis of the gram stain, has been marketed as an antiseptic since the 1890s.¹ It was used intravenously in the early 20th century to treat sepsis, until being replaced by penicillin and other oral antibiotics. Its exact mechanism of action is unknown, although it is hypothesized to promote free radical formation, inhibit bacterial protein synthesis, and uncouple oxidative phosphorylation. *In vitro* studies have demonstrated its effectiveness against gram-positive bacteria and *Candida*, and clinical studies have shown effectiveness against some skin infections, including methicillin-resistant *Staphylococcus aureus* (MRSA).^{2,3} Given its low cost, ready availability, and limited adverse effects, topical gentian violet may be a useful treatment in under-developed parts of the world as the incidence of MRSA and other skin and soft tissue infections increases.

Conflicts of Interest: By the WestJEM article submission agreement, all authors are required to disclose all affiliations, funding sources and financial or management relationships that could be perceived as potential sources of bias. The authors disclosed none.

REFERENCES

1. Maley AM, Arbiser JL. Gentian violet: a 19th century drug re-emerges in the 21st century. *Exp Dermatol*. 2013;22:775-780.
2. Berrios RL, Arbiser JL. Effectiveness of gentian violet and similar products commonly used to treat pyodermas. *Dermatol Clin*. 2011;29:69-73.
3. Brockow K, Grabenhorst P, Abeck D, et al. Effect of gentian violet, corticosteroid and tar preparations in *Staphylococcus aureus*-colonized atopic eczema. *Dermatology*. 1999;199:231-236.



Figure. A purple ulcer on the left medial thigh.

Address for Correspondence: Caleb Canders, MD, David Geffen School of Medicine at UCLA, 924 Westwood Boulevard, Suite 300, Box 951777, Los Angeles, CA 90095. Email: ccanders@mednet.ucla.edu.